

Appln No. 10/045,283

Amdt date November 10, 2005

Reply to Office action of August 8, 2005

Amendments to the Drawings:

The attached sheets of drawings include changes to FIGs. 1, 2, 3, 4, 5a, 5b, and 6 and replace the original sheets including these drawings.

Attachment: Replacement Sheets

Annotated Sheets Showing Changes

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REMARKS/ARGUMENTS

Claims 1 - 55 were in the application when last examined. Of these Claims 1, 47 - 49 and 54 were independent. Claims 3 - 4, 47, 52, and 55 have been canceled. Claims 1, 5, 49, 51, 53, and 54 have been amended. Claims 1 - 2, 5 - 46, 48 - 51, and 53 - 54 are now pending.

The specification is amended to correct the relationship of the current application to its parent application 09/430,466 since issued as U.S. Patent No. 6,553,063. The current application was originally indicated as a continuation-in-part of the parent due to new-matter objections raised by the examiner of the parent case to amendments to the specification that were intended as extra explanation for one not skilled in the art. However, the position of the examiner in the parent case later changed as he addressed the substance of the application in an office action dated February 13, 2002. The Examiner is also referred to the discussion set forth in the IDS submission of February 4, 2002, in the present application for further explanation.

The specification is also amended as per the Examiner's suggestions and to reflect amendments to reference numerals in FIG. 5a and for other informalities.

A new corrected FIG. 1 was required by the Examiner that labeled the elements as referenced in the application. All of the FIGs. 1, 2, 3, 4, 5a, 5b, and 6 have been amended to include element labels and to remove reference numerals that do not appear in the specification.

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The Examiner has objected to Claim 51 for an informality. Claim 51 is amended as per the Examiner's suggestion.

The Examiner has rejected Claim 55 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. In particular, the Examiner states that, as to Claim 55, the term "substantially minimum" is indefinite. Claim 55 is canceled.

The Examiner has rejected Claims 1 - 3, 11 - 18, 47 and 49 - 53 under 35 U.S.C. §102(b) as being anticipated by Williams (U.S. Patent No. 5,598,435). Claim 54 is rejected under 35 U.S.C. §102(e) as being anticipated by Langwellpott (U.S. Patent No. 5,063,573).

The Examiner has provisionally rejected Claims 1 - 54 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 - 53 of issued U.S. Patent No. 6,553,063. The Examiner states that Claims 1 - 54 would be allowable if a timely Terminal Disclaimer is filed.

The Applicants submit herewith a Terminal Disclaimer to overcome the obviousness-type double patenting rejection. Accordingly, the Applicants respectfully request that the provisional double-patenting rejection be withdrawn.

The Applicants' amended Claim 1 calls for "wherein the transmission symbol is comprised of a selectable integer plurality of data bit vectors ... and wherein the data transformer ... reversibly groups ones of the first predetermined integer number of data bits into selected ones of the selectable integer plurality of data bit vectors and ones of

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the second predetermined integer number of data bits into selected others of the selectable integer plurality of data bit vectors in the response to the data channel condition, the selectable integer plurality of data bit vectors forming at least one data symbol corresponding to a predetermined pattern being representative of a preselected signal constellation." Similar language in Claim 4, and Claim 3 from which Claim 4 used to depend, was only provisionally rejected per double-patenting. Amended Claim 1 is therefore allowable but for the double-patenting rejection that is remedied by the enclosed Terminal Disclaimer.

Claims 2 and 5 - 46 are dependent on Claim 1. As such, these claims are believed allowable based upon Claim 1.

The Applicants' amended Claim 49 calls for "wherein the selectable predetermined integer number of data bits is one of k bits and $k+1$ bits, where k is an integer number of data bits." A similar language in now canceled Claim 52 was rejected as per column 4, lines 19 - 23 of Williams. The cited passage of Williams states that "to simplify the example, the 8kHz channel, since it carries an integer number of (3) bits, could be taken out of the base conversion computation at both stations, merely being transmitted independently by the 8 kHz carrier." This passage, however, does not teach or suggest any characteristics for "the number of data bits" other than the fact that the number of bits is an integer. As such, the Applicants submit that amended Claim 49 is not anticipated by Williams under 35 U.S.C. §102(b).

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Claims 50 - 51 and 53 are dependent on Claim 49. As such, these claims are believed allowable based upon Claim 49.

The Applicants' amended Claim 54 calls for "wherein the maximum-likelihood sequence estimation receiver selects a path through a code trellis having a minimum noise-power-inversely-weighted-squared-Euclidean distance." Aside from a 35 U.S.C. § 112 rejection that has been addressed in the above language, similar language in Claim 55 was only provisionally rejected per double-patenting. Amended Claim 54 is therefore allowable but for the double-patenting rejection that is remedied by the enclosed Terminal Disclaimer.

Accordingly, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. Reconsideration of the above Application is requested.

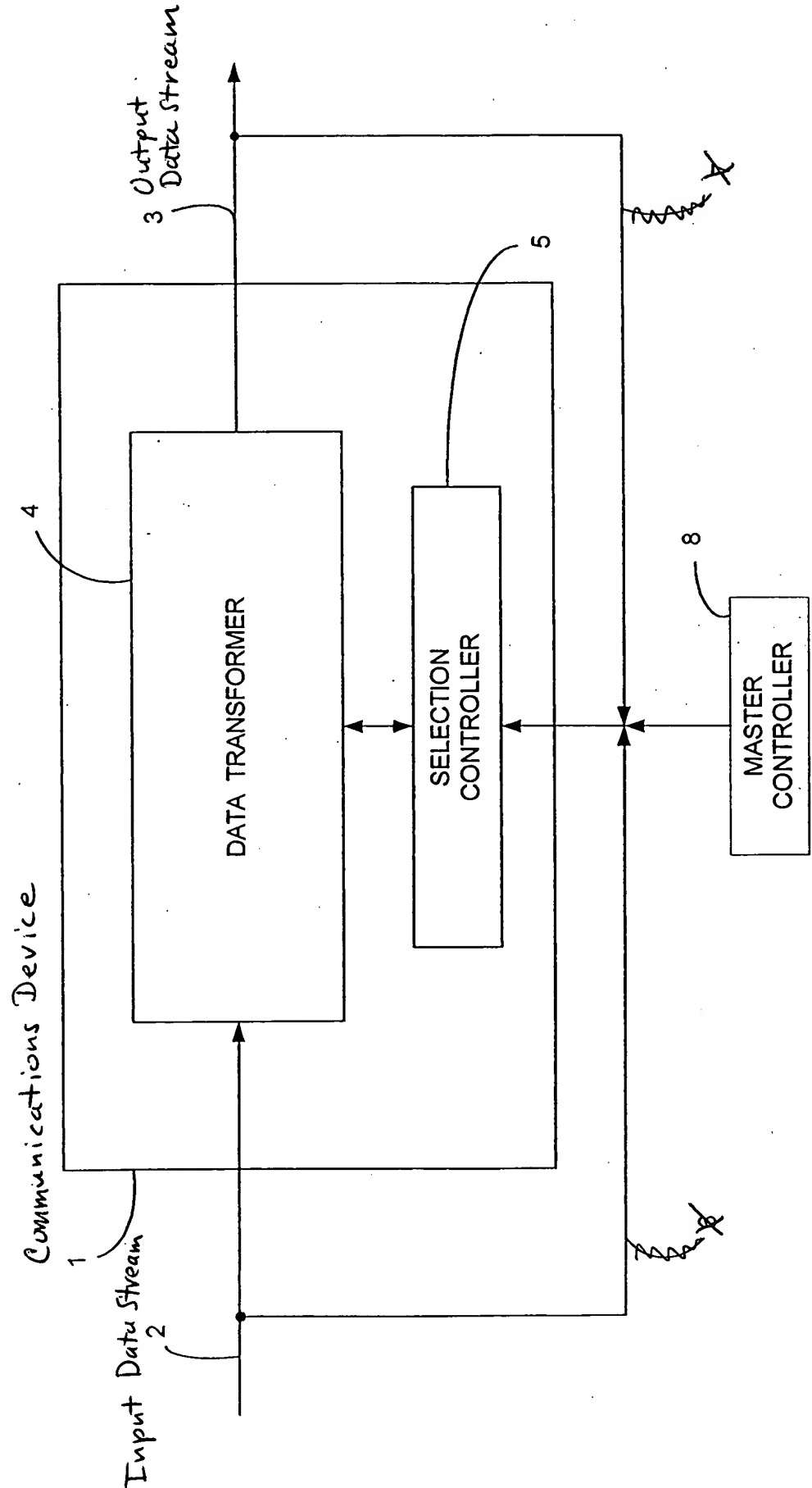
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FIG. 1



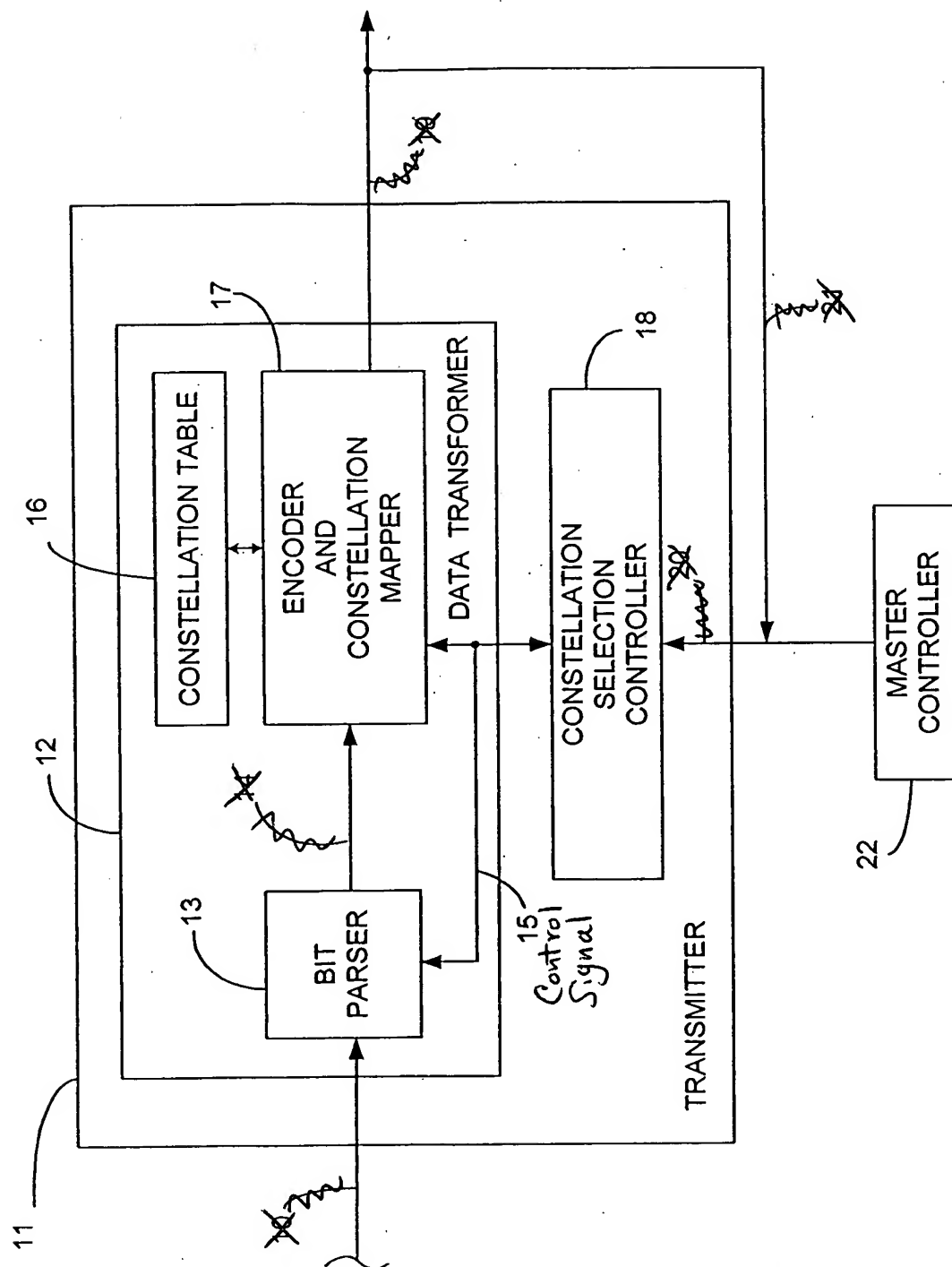


FIG. 2

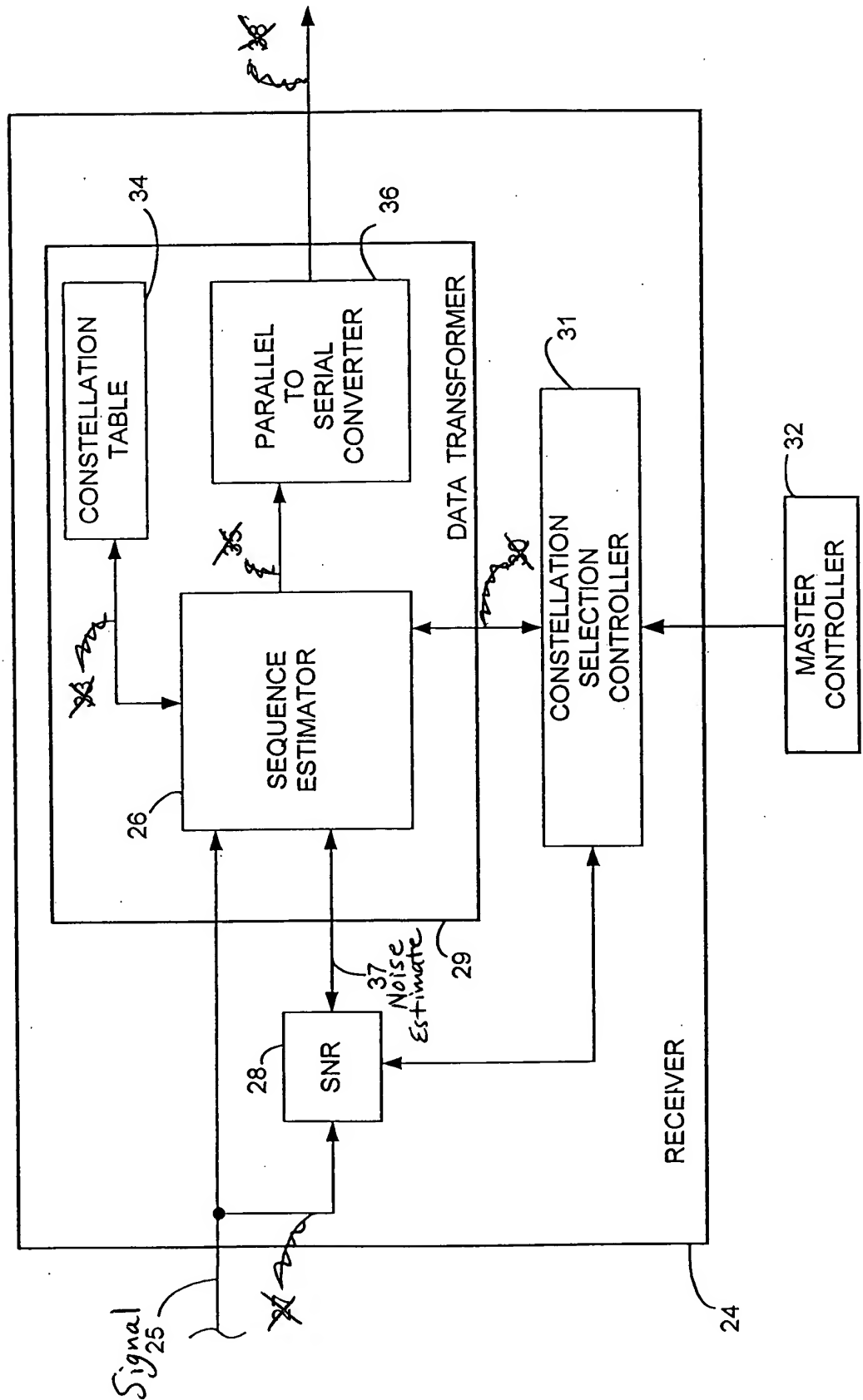


FIG. 3

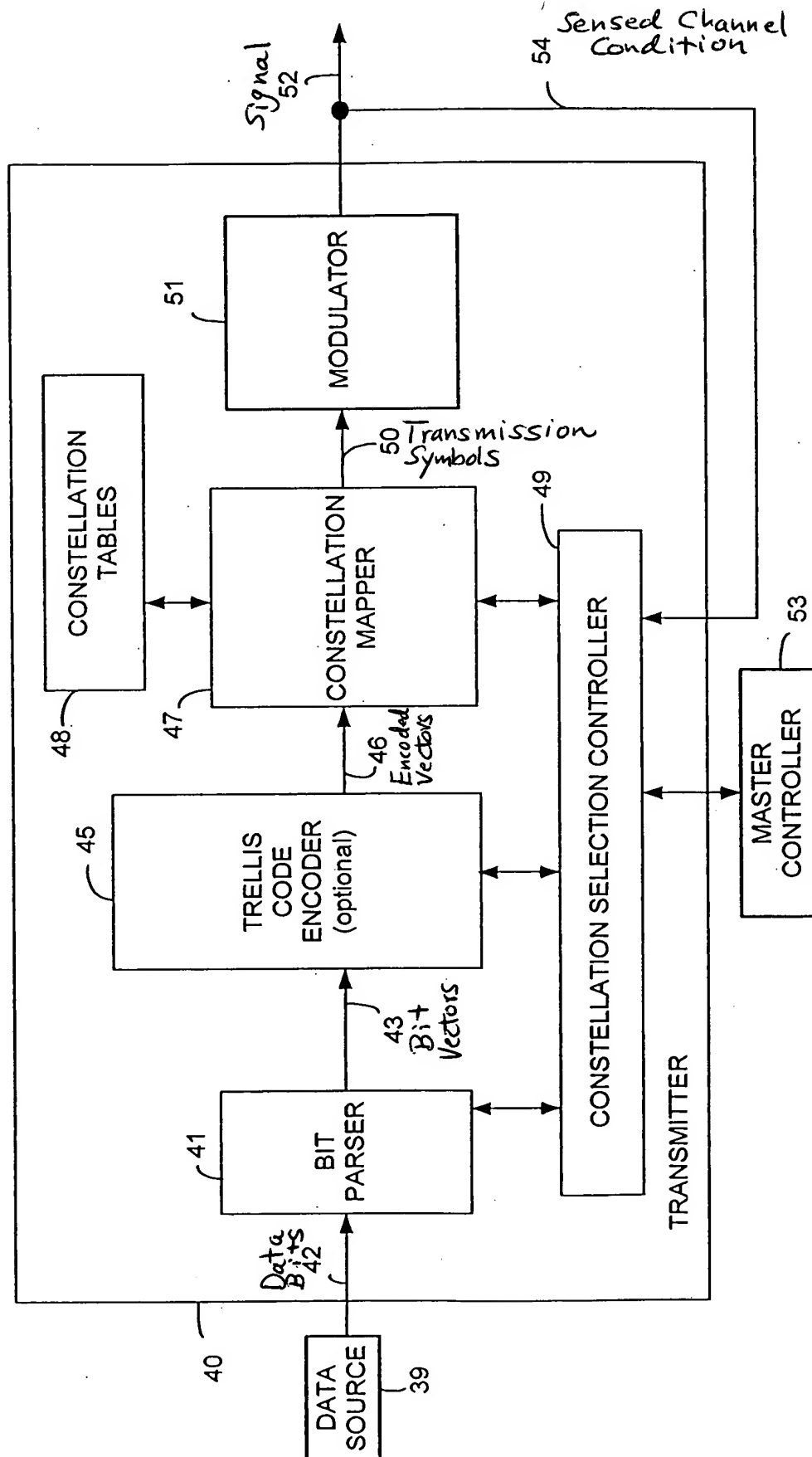


FIG. 4

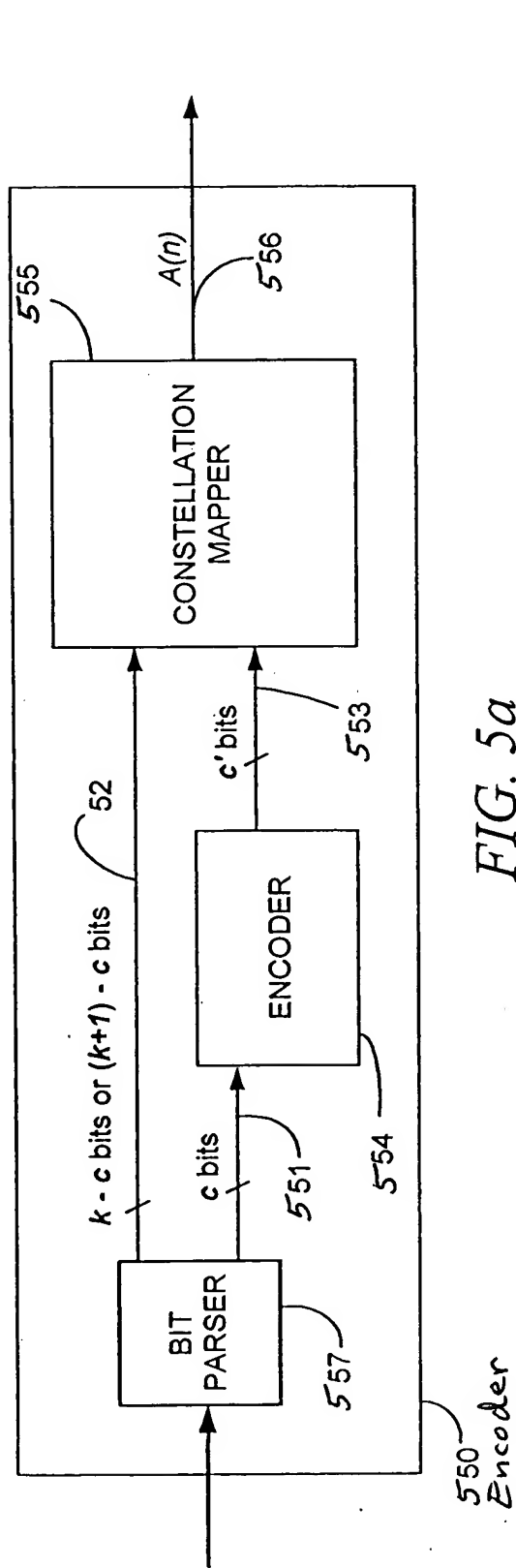


FIG. 5a

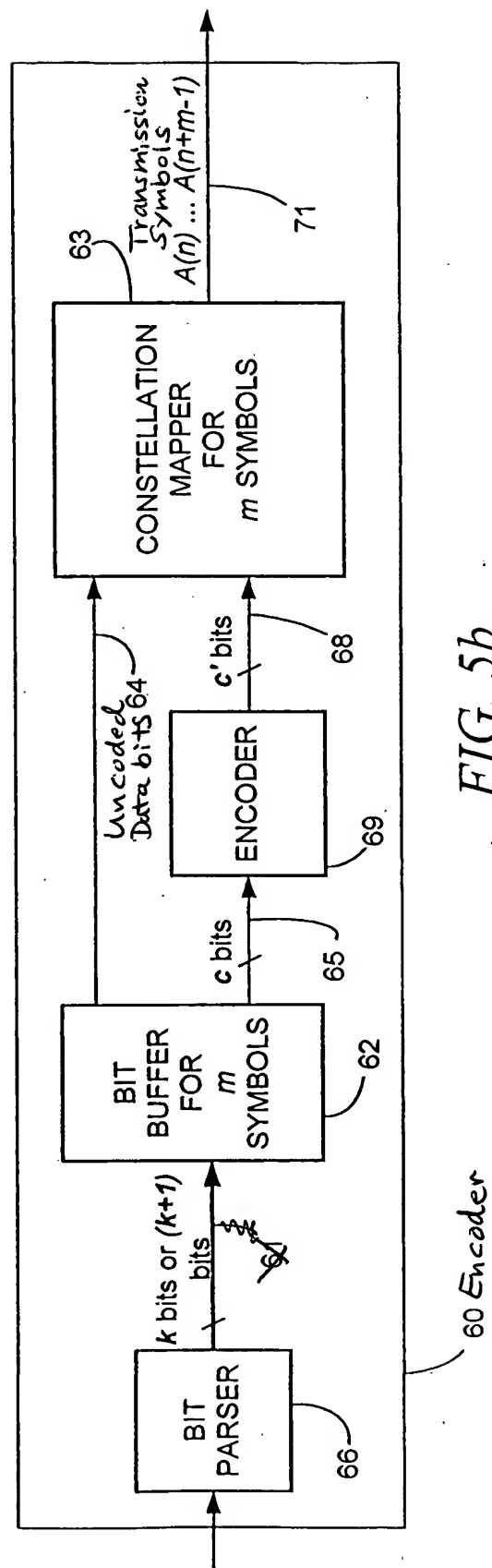


FIG. 5b

FIG. 6

